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EXAMINER

BLOUNT, MARK S

ART UNIT	PAPER NUMBER
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2653

15

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 12

Application Number: 09/768,974

Filing Date: January 23, 2001

Appellant(s): CHANG, KEN

David M. Sigmond
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01 August 2003.

I. Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

II. Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

III. Status of Claims

The statement of the status of the claims contained in the brief is correct.

Claims 31-34,36, and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-30, 35, and 37-39 are rejected.

IV. Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

V. Summary of Invention

The summary of invention contained in the brief is correct.

VI. Issues

The appellant's statement of the issues in the brief is substantially correct.

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VII. Grouping of Claims

For the sole issue, the claims do not stand and fall together and are grouped as follows:

- (i) Claims 13,20,23,29, and 30
- (ii) Claims 24-28,37, and 38
- (iii) Claim 35
- (iv) Claim 39
- (v) Claims 1-9,11,14-19,21, and 22
- (vi) Claim 10

VIII. Prior Art of Record

- (i) Tohkairin, Koichi (US 5,963,398)

X. Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-30,35, and 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Tohkairin (USPN 5,963,398).

Regarding Claim 1, 2,10-12, 23, and 37, Tohkairin shows a disk drive (Fig. 3) with a head stack assembly (Fig. 27) including a positioner (20) for moving an E-block (Fig. 9) and a data transducer (Fig. 3, (14-1)) of a disk drive relative to a storage disk (Fig. 3), the E-block having a longitudinal axis, the positioner comprising a magnet assembly (Figs. 12 and 13), including an upper and lower magnetic array, producing a magnetic field and a coil array (Fig. 27, (90)) that couples to the E-block and is positioned near the magnet assembly, the coil array being generally a D-shaped loop including a first segment (Fig. 14, (90-3)) that is positioned substantially perpendicular to the longitudinal axis of the E-block, the first segment being adapted to interact with the magnetic field to move the E-block relative to the storage disk and is substantially linear, wherein the only portion of the coil array that interacts with the magnetic

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field of the magnet assembly when the coil array is electrically excited is positioned substantially perpendicular to the longitudinal axis of the E-block (Fig. 27).

Regarding Claims 3-9 and 13-19, Tohkairin shows all the features described, *supra*, in addition to a control system (Fig. 4) that directs current to the coil array, being a generally shaped loop, to move the data transducer relative to the target track and electrically excites the first portion interacting with the magnetic field to generate a first force and the second portion interacting with the magnetic field to generate a second force that are substantially parallel, equal in magnitude, and opposite in direction. Tohkairin also shows a first portion (Fig. 14, (90-1)) positioned on one side of the longitudinal axis of the E-block, and a second portion (Fig. 14, (90-2)) positioned on an opposite side of the longitudinal axis E-block (See Examiner's Drawing), wherein the first and second portions, substantially symmetrical relative to the longitudinal axis, are adapted to interact with the magnetic field to move the E-block relative to the storage disk, an upper magnet array and a lower magnet array, wherein the first and second portions are positioned substantially between the upper and lower magnet arrays, a center portion being positioned between the first and second portions, the center portion (See Examiner's Drawing) electrically connecting the first portion to the second portion, the center portion being positioned such that the center portion does not substantially interact with the magnetic field when the center portion is electrically excited, and coil array including a second segment that is connected to the first segment, the second segment being positioned relative to the magnet assembly such that the second segment does not interact with the magnetic field when the second segment is electrically excited.

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Regarding Claims 20-22, drawn to a method of retrieving data from a target track on a rotating storage disk of a disk drive using the aforementioned apparatus, the limitations of the method claims are met and are anticipated by Tohkairin when the apparatus operates.

Regarding Claims 24-27, Tohkairin shows (Fig. 5) the coil array (90) includes a first segment and second segment, the first segment is substantially linear and the second segment forms an arc (See Examiner's Drawing), the first segment is substantially perpendicular to a longitudinal axis of a head stack assembly (Fig. 1, (26)) that includes the data transducer (Fig. 3, (14-1)), the second segment forms an arc that is centered at a pivot center of the head stack assembly, and the first and second segments are positioned symmetrically about the longitudinal axis.

Regarding Claims 28-30 and 38, Tohkairin shows (Fig. 1) the positioner wherein the first segment includes a first portion, a second portion and a center portion therebetween, the first and second portions are positioned between the magnetic arrays, and the center portion is not positioned between the magnetic arrays, wherein the magnetic arrays each include an inner side, an outer side, and a pair of side wings therebetween, the inner side faces towards the data transducer (14-1) and forms an arc, and the outer side faces away from the data transducer, wherein the inner side forms an arc that is centered at a pivot center for the data transducer (See Examiner's Drawing).

Regarding Claims 35 and 39, Tohkairin shows (Fig. 1) the positioner wherein the magnetic arrays extend a first distance parallel to a longitudinal axis of the head stack assembly that includes the data transducer, the coil array extends a second distance parallel to the longitudinal axis, and the first distance is greater than the second distance.

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XI. Response to Arguments

Appellant's arguments filed August 1, 2003 have been fully considered but they are not persuasive.

Appellant asserts on Page 6 :

“ Front and rear coil portions 90-3 and 90-4 do not interact with the magnetic field of lower and upper magnets 154 and 156.”

The Examiner maintains that Tohkairin clearly shows (Fig.14) that the front and rear coil portions 90-3 and 90-4 do interact with the magnetic field of lower and upper magnets 154 and 156, where they overlap, as delineated by the dashed line. Since the magnets and coil overlap, there must be magnetic interaction.

Appellant asserts on Page 7 :

“Movable coil 90 is not a generally “D-shaped” loop, ...Rather, movable coil 90 is a generally rectangular shaped loop.”

The Examiner maintains that Tohkairin clearly shows (Fig.14) a “D-shaped” coil as part of the positioner in the disk apparatus. The shape of a “D” is highly interpretive, as is evident in the numerous script styles with which “D” can be written or printed. The Examiner contends that the coil is “D-shaped” (see attached figure). Furthermore, the coil is definitely **not** rectangular shaped. The terms, rectangle or rectangular, are defined as “ a parallelogram all of whose angles are right angles”. Clearly, there are no right angles in the movable coil of Fig. 14 , and is not rectangular in shape as the appellant states.

Appellant asserts on Page 7 :

Tohkairin fails to teach or suggest that “ the coil array includes a first segment and a second segment, the first segment is substantially linear and the second segment forms an arc.”

The Examiner maintains that Tohkairin clearly shows (Fig. 14) that there is a first segment (90-3) and a second segment (90-4), where the first segment is linear (straight) and the second segment forms an arc (curve).

Appellant asserts on Page 8 :

Tohkairin fails to teach or suggest that “ the magnetic arrays extend a first distance parallel to a longitudinal axis of a head stack assembly that includes the data transducer, the coil array extends a second distance parallel to the longitudinal axis, and the first distance is greater than the second distance.”

The Examiner maintains that Tohkairin clearly shows (Examiner's Drawing) that the magnetic arrays (154) extend a first distance (D1) parallel to a longitudinal axis of a head stack assembly that includes the data transducer, the coil array (90) extends a second distance (D2) parallel to the longitudinal axis, and the first distance is greater than the second distance ($D1 > D2$).

Appellant asserts on Page 8 :

Tohkairin fails to teach or suggest that “ the coil array ... including a first segment that is positioned substantially perpendicular to the longitudinal axis of the E-block, the first segment being adapted to the magnetic field to move the E-block relative to the storage disk.”

The Examiner maintains that Tohkairin clearly shows (Fig. 14) that there is a first segment (90-3) perpendicular to the longitudinal axis, overlapping the magnetic array (shown by the dashed line), and interacting with the magnetic field to move the E-block.

Appellant asserts on Page 9 :

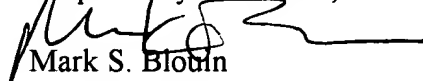
Tohkairin fails to teach or suggest that “ ... that front and rear coil portions 90-3 and 90-4 interact with a magnetic field, or that lower and upper magnets 154 and 156 extend further along a longitudinal axis than movable coil 90.”

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The Examiner maintains that Tohkairin clearly shows (Fig. 14) that front and rear coil portions 90-3 and 90-4 interact with a magnetic field, overlapping the magnetic array (shown by the dashed line), and interacting with the magnetic field to move the E-block. Also, lower and upper magnets 154 and 156 extend further along a longitudinal axis than movable coil 90, as distinctly shown in the attached Examiner's drawing.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully Submitted,


Mark S. Blotin
Art Unit 2653

MSB

May 28, 2003

Conferee
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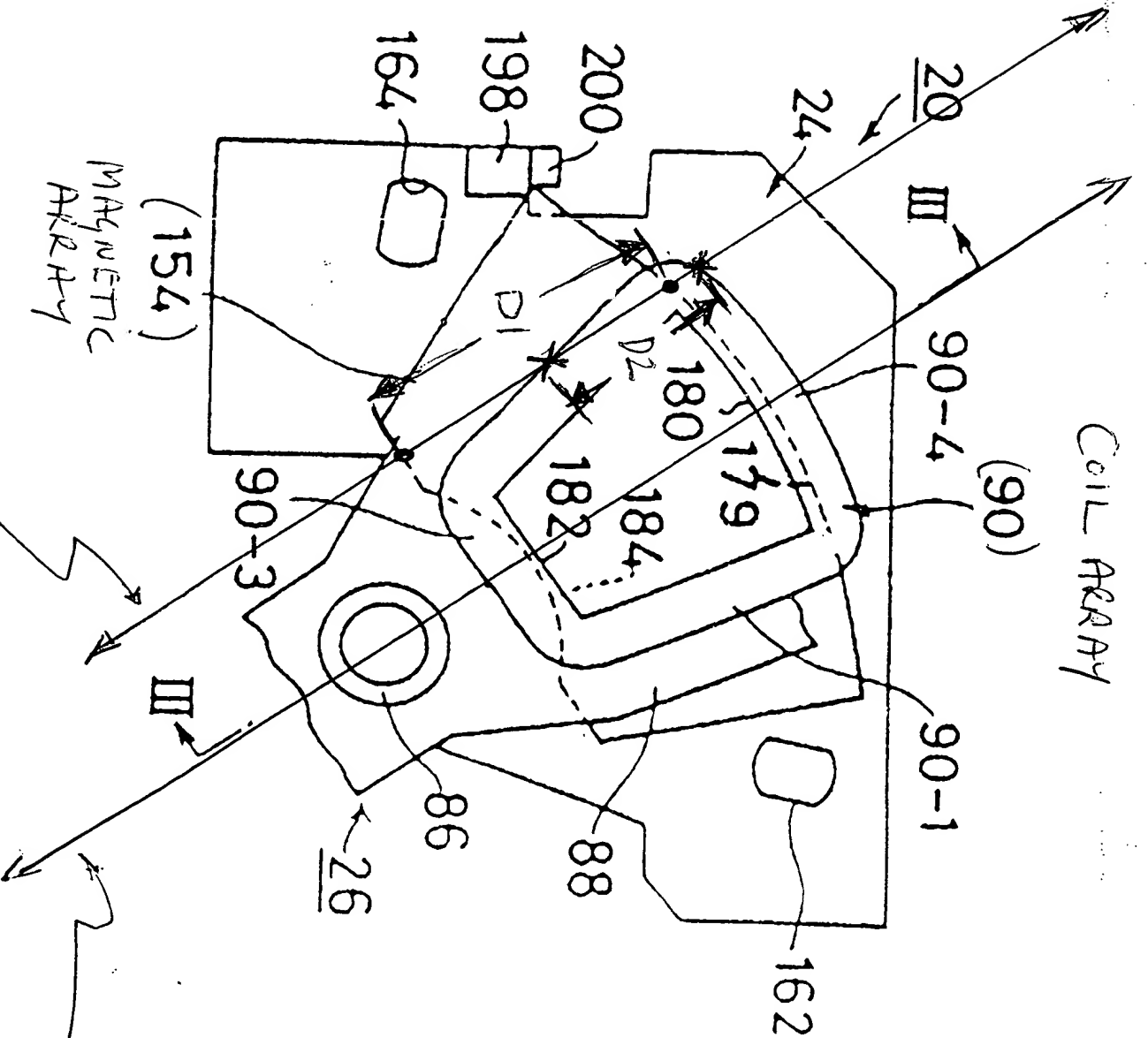
WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

From Fig 14 of TOTHAKAIEIN

D1 - 1st Distance
along magnetic
array

D2 - 2nd Distance
along coil array

$D1 > D2$



LINE PARALLEL
TO LONGITUDINAL AXIS

LONGITUDINAL
AXIS OF HEAD
STACK ASSEMBLY

EXAMINER'S
DRAWING